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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,684	05/19/2005	Jeffrey Powell	05-409	7931

20306 7590 11/12/2009

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EXAMINER	
NGO, HUNG V	

ART UNIT	PAPER NUMBER
2831	

MAIL DATE	DELIVERY MODE
11/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,684	POWELL ET AL.	
	Examiner	Art Unit	
	Hung V. Ngo	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 8-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choon et al (US 5,608,188) in view of Izzat et al (Electronics Letters, vol. 32, No. 8, pp. 721-722).

Re claim 1, Choon et al disclose a package (101) for a high frequency electrical circuit (201) comprising a cavity formed within a material for containment of the electrical circuit (Fig 1), wherein the package include a material extending into the cavity the material extending into the cavity having a conductive region (col. 2, lines 45-55).

Re claim 5, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 6, wherein at least one region of the conductive material is arranged to have a specific resistance substantially similar to that of a predicted electromagnetic field that will be present when the cavity is in use (col. 2, lines 45-55).

Re claim 8, wherein the package is designed to house circuitry (201) operative in at least one of the milliwave region in compartment (111) and submilliwave region in compartment (113).

Re claim 9 wherein the material extending into the cavity is mounted on a removable portion of the package (Fig 1).

Re claim 10, wherein the material extending into the cavity is mounted such that it is substantially normal to the surface (Fig 1)

Re claim 11, wherein the at least one conductive surface is mounted in a substantially symmetric fashion within the cavity in relation to a pair of opposing walls of the package (Fig 1).

Re claim 12, wherein the material extending into the cavity is substantially planar (Fig 1).

Re claim 15, a vane for suppressing cavity mode radiation and suitable for mounting within a package for a high frequency electrical circuit, the vane comprising at least in part a layer of conductive material (103) (col. 2, lines 45-55), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 16, wherein the vane comprises a substrate upon which is arranged the conductive material layer (Fig 1).

Re claim 17, wherein the vane is mounted to an inner surface of the package by being affixed substantially along an edge of the vane (Fig 1).

Re claim 18, a high frequency electrical circuit mounted within a cavity (111, 113) in a package, wherein the cavity has an inner surface on which is positioned a material having a conductive surface (103) extending into the cavity, the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 19, a method of manufacturing a package (101) for a high frequency electrical circuit (201), comprising positioning a conductive surface (103) on an inner surface of the package, the conductive surface extending into the package (Fig 1).

Re claim 20, wherein the conductivity of the conductive surface is chosen by one of: simulation of expected electrical properties (shielding property)of circuitry within the package, and a trial and error approach (col. 2, lines 45-55).

Re claim 22, a wherein the vane is mounted to an inner surface of the package by being affixed within a slot (407, 409) in the inner surface.

The teaching as discussed above does not disclose the conductive material being adapted to partially absorbent to electromagnetic radiation (re claims 1, 19), the conductive material comprising Nichrome or carbon (re claims 13, 14).

Izzat et al teaches the use of conductive material (resistive sheets) which is adapted to damp cavity resonance. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conductive material of Izzat et al for the conductive material of Choon et al for the purpose of damping a cavity resonance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Nichrome or Carbon for the conductive material of the modified Choon et al, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

The teaching as discussed above does not disclose at least one conductive surface is substantially cylindrical (re claim 21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the conductive surface the modified Choon et al by employing cylindrical surface for intended use, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. v. Fab-Con, Inc. (CA 8, 1982) 215 USPQ 835.

Claims 1-20, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benzoni (US 5,416,668) in view of Izzat et al (Electronics Letters, vol. 32, No. 8, pp. 721-722).

Re claim 1, Benzoni disclose a package (20, 24) for a high frequency electrical circuit (22) comprising a cavity (36) formed within a material for containment of the electrical circuit, wherein the package additionally comprises of a material having at least one surface (52) extending into the cavity, the at least one surface having a conductive material (col. 3 lines 29-31).

Re claim 2, wherein the at least one conductive surface comprises a layered structure with a first layer comprising a substrate (col. 2,line 26) and a second layer comprising a conductive material (col. 3, lines 29).

Re claim 3, wherein the substrate comprises a material chosen from alumina, quartz, plastic, glass and cardboard (col. 2, line 39).

Re claim 4, wherein the substrate comprises a dielectric occupying a substantial region of the cavity (Fig 1).

Re claim 5, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 6, wherein at least one region of the conductive material is arranged to have a specific resistance (col. 3, line 53) substantially similar to the impedance a predicted electromagnetic field that will be present when the cavity is in use.

Re claim 7, wherein the conductive material has conductivity properties different to that of other parts of the cavity (col. 3, line 53)

Re claim 8, wherein the package is designed to house circuitry (22) operative in at least one of the milliwave region in compartment and submilliwave region in the other compartment (Fig 1).

Re claim 9 wherein the material extended into the cavity is mounted on a removable portion of the package (Fig 1).

Re claim 10, wherein the material extended into the cavity is mounted such that it is substantially normal to the surface (Fig 1)

Re claim 11, wherein the at least one conductive surface is mounted in a substantially symmetric fashion within the cavity in relation to a pair of opposing walls of the package (Fig 1).

Re claim 12, wherein the material extended into the cavity is substantially planar (Fig 1).

Re claim 15, a vane for suppressing cavity mode radiation and suitable for mounting within a package (20, 24) for a high frequency electrical circuit, the vane comprising at least in part a layer of conductive material (52) (col. 3, line 29), the

conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 16, wherein the vane comprises a substrate upon which is arranged the conductive material layer (Fig 1).

Re claim 17, wherein the vane is mounted to an inner surface of the package by being affixed substantially along an edge of the vane (Fig 1).

Re claim 18, a high frequency electrical circuit mounted within a cavity (36) in a package, wherein the cavity has an inner surface on which is positioned a material having a conductive surface (52)(col. 3, line 29) extending into the cavity, the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 19, a method of manufacturing a package (20, 24) for a high frequency electrical circuit (22), comprising positioning a material having a conductive region (52)(col. 3, line 29) on an inner surface of the package, the conductive surface extending into the package (Fig 1).

Re claim 20, wherein the conductivity of the conductive region is chosen by one of: simulation of expected electrical properties of circuitry within the package, and a trial and error approach (col. 3, lines 29-40).

Re claim 23, wherein the surface having thereupon the conductive material resides in a slot (48, 50) located in a dielectric material in the cavity.

Re claim 24, wherein the conductive material resides in a hole (48, 50) located in a dielectric material cavity.

Re claim 25, wherein the hole has a cylindrical form (Fig 1).

Re claim 27, wherein the substrate has a surface perpendicular to at least one wall of the package, the perpendicular surface having thereupon the conductive material (Fig 1).

The teaching as discussed above does not disclose the conductive material being adapted to partially absorbent to electromagnetic radiation (re claims 1, 19).

Izzat et al teaches the use of conductive material (resistive sheets) which is adapted to damp cavity resonance. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conductive material of Izzat et al for the conductive material of Benzoni for the purpose of damping a cavity resonance.

The teaching as discussed above does not disclose the conductive material made of nichrome, carbon or ink (re claims 13, 14 26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use nichrome, carbon or ink for the conductive material of Benzoni for intended use, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benzoni (US 5,416,668) in view of Izzat et al (Electronics Letters, vol. 32, No. 8, pp. 721-722).

Re claim 28, Benzoni discloses a package (20, 24) for a high frequency electrical circuit (22) comprising a cavity (36) formed within a material for containment of the

electrical circuit, wherein the package additionally comprises of a material having at least one surface (52) extending into the cavity, the at least one surface having a conductive material (col. 3 lines 29-31).

Re claim 34, Benzoni discloses a package for a high frequency electrical circuit comprising a cavity (36) formed within a material for containment of the electrical circuit, wherein the package additionally comprises a dielectric material (nonconductive) (abstract) extending into the cavity (Fig 1) and occupying a substantial region thereof, the dielectric material extending into the cavity incorporating a resistive material (conductive coating) on a surface thereof (abstract).

Re claim 29, wherein the at least one conductive surface comprises a layered structure with a first layer comprising a substrate (col. 2,line 26) and a second layer comprising a conductive material (col. 3, lines 29).

Re claim 30, wherein the substrate comprises a dielectric occupying a substantial region of the cavity (Fig 1).

Re claim 31, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 32, wherein the region having thereupon the conductive material resides in a slot located in a dielectric material in the cavity (Fig 1).

Re claim 33, wherein the conductive material resides in a hole located in a dielectric material in the cavity (Fig 1).

The teaching as discussed above does not disclose the conductive being adapted to partially absorbent to electromagnetic radiation, the conductive region

having a resistivity between 10-1K ohm/square (re claim 28), the resistivity of the resistive material being adapted to be at least partially absorbent to electromagnetic radiation in the cavity (re claim 34).

Izzat et al teaches the use of conductive material or resistive material (resistive sheets) which is adapted to damp cavity resonance. The conductive region having a resistivity between 10-1K ohm/square (page 721). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conductive material of Izzat et al for the conductive material of Benzoni for the purpose of damping a cavity resonance.

Response to Arguments

Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V. Ngo whose telephone number is (571) 272-1979. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2800 EXT 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung V Ngo/
Primary Examiner, Art Unit 2831